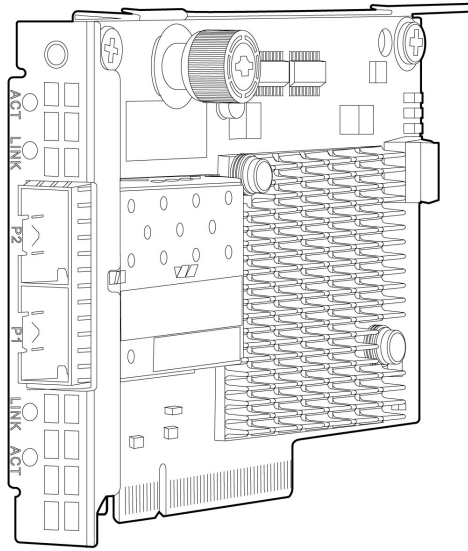


Overview

The HP Ethernet 10Gb 2-port 530FLR-SFP+ adapter, featuring the next generation of 10Gb Ethernet integration offering a single chip solution on a Flexible-LOM form factor, further reducing power requirements for 2 ports of 10Gb Ethernet. It is designed for use with HP ProLiant Gen8 servers.

The HP 530FLR dual-port design is ideal for high performance computing, server virtualization, security, server consolidation, and other applications requiring highest throughput. The total aggregate throughput of 20Gb meets the needs for customers desiring highest bandwidth.

The HP 530FLR supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Receive Side Scaling (RSS), jumbo frames, PXE boot and virtualization features such as VMware NetQueue and Microsoft VMQ.



Models

HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter

647581-B21

Kit Contents

- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- Quick install card
- Product warranty statement

Compatibility

Servers

ProLiant DL (rack-optimized):

- HP ProLiant DL360p Gen8
- HP ProLiant DL380p Gen8

ProLiant SL (scalable line):

- HP ProLiant SL230 Gen8
- HP ProLiant SL250 Gen8

NOTE: This is a list of supported servers. Some may be discontinued.



Standard Features

Product Features

- Flexible-LOM for select HP Rack servers
- Industry-leading throughput and latency performance
- Up to 40Gb/s bi-directional near line rate throughput
- Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)
- Improved small packet performance
- Integrated PHY and MAC
- Support for Preboot eXecution Environment (PXE)

Dual-port 10 Gigabit Ethernet Throughput

The HP 530FLR adapter delivers 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex), providing the network performance needed to improve response times and alleviate bottlenecks that impact performance of next generation data centers. 10Gb Ethernet bandwidth is ideal for high performance computing, database clusters, and more.

Jumbo Frames

The HP 530FLR adapter supports jumbo frames (also known as extended frames), permitting up to a 9K byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over 5X the size of a standard 1500-byte Ethernet frame. With jumbo frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.

TCP/IP Stateless Offloading

TCP, IP, UDP checksum offload, Large Send Offload (LSO), TCP, Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

MSI and MSI-X

Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

802.1Q VLANs

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HP 530FLR adapter to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance.

TOE

TCP/IP Offload Engine (TOE) shifts the processing of data in the TCP protocol stack from the server CPU to the adapter's processor, freeing server CPU cycles for other operations.

Optimized for Virtualization

I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads.

Compliant with Single-Root I/O Virtualization (SR-IOV), accommodating multiple Virtual Machines (VMs) to share single PCIe resources. The device is capable of SR-IOV, and requires Firmware, Software and OS support

FlexibleLOM slot Compatibility

Compatible with HP FlexibleLOM slot for select HP Rack servers



Standard Features

Network Adapter Teaming The HP 530FLR adapter support for NIC teaming helps IT administrators increase network fault tolerance and increased network bandwidth. The team of adapters can work together as a single virtual adapter. The HP 530FLR provides support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs

Network Management

Management Support The HP 530FLR adapter can be administered from HP Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HP 530FLR adapter can also be managed by other applications with SNMP support.

Server Integration The HP 530FLR adapter is a validated, tested, and qualified solution that is optimized for HP ProLiant servers. HP validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HP Intelligent Provisioning and HP Systems Insight Manager that simplify network management.

This approach provides a more robust and reliable networking solution than offerings from other vendors and provides users with a single point of contact for both their servers and their network adapters.

Configuration Utilities Each HP 530FLR ships with a suite of operating system-tailored configuration utilities that allow the user to enable initial diagnostics and configure adapter teaming. This includes a patented teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.

LED Indicators The colored LEDs on each port of the HP 530FLR adapter indicate link status and link activity.

Preboot eXecution Environment (PXE) PXE allows the server to boot over the network and download software residing in the network.

HP Sea of Sensors 3D Support for HP's Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling.

Warranty Maximum: The remaining warranty of the HP product in which it is installed (to a maximum three-year, limited warranty).
Minimum: One year limited warranty.
[Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html](http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html)



Service and Support

Service and Support

HP Technology Services

HP Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime.

Protect your business beyond warranty with HP Care Pack Services

When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HP Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response.

Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, HP can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service

Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf>

OR

3-Year HP 24x7 4 hour Response, HP Collaborative Support

Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HP. If the problem is with HP HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>



Service and Support

Related HP Care Pack Services to enhance your HP product experience

Related Services

3-Year HP 24x7 4 hour Response, Proactive Care or Critical Advantage

Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-2140ENW.pdf>

OR

3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support

Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.

HP Proactive Select Service

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf>

Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more

<http://www.hp.com/go/insightremotesupport>

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Parts and materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.



Service and Support

Warranty / Service Coverage

For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant> or www.hp.com/services/bladessystem



Related Options

Direct Attach Cable	HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable	487649-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable	487652-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable	487655-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable	537963-B21
	NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments.	

Fiber Optic Modules	HP BLc 10Gb SR SFP+	455883-B21
	NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.	

Fiber Optic Cables	2M LC-SC Cable Kit (2Gb to 1Gb)	221691-B21
	5M LC-SC Cable Kit (2Gb to 1Gb)	221691-B22
	15M LC-SC Cable Kit (2Gb to 1Gb)	221691-B23
	2m LC-LC FC Cable Kit	221692-B21
	5m LC-LC FC Cable Kit	221692-B22
	15m LC-LC FC Cable Kit	221692-B23
	30m LC-LC FC Cable Kit	221692-B26
	50m LC-LC FC Cable Kit	221692-B27
	HP .5m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ833A
	HP 1m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ834A
	HP 5m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ836A
	HP 15m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ837A
	HP 30m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ838A
	HP 50m Multi-mode OM3 50/125um LC/LC 8Gb FC and 10GbE Laser-enhanced Cable 1 Pk	AJ839A
	NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.	
	NOTE: For additional information on 10Gb cable specifications go to: http://www.hewlett-packard.com/rnd/pdfs/10gig_cabling_technical_brief.pdf	

Gigabit Server Adapters	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21



Related Options

10 Gigabit Server
Adapters

NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.		
NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.		
HP NC522SFP Dual Port 10GbE Gigabit Server Adapter		468332-B21
HP NC523SFP 10Gb 2-port Server Adapter		593717-B21
HP NC524SFP Dual Port 10GbE Module		489892-B21
NOTE: NC524SFP is available only on DL370 G6, ML370 G6, DL580 G7, DL585 G7, and DL980 G7.		
HP NC550SFP Dual Port 10GbE Server Adapter		581201-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter		614203-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter		629142-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs		



Technical Specifications

General Specifications	Network Processor	Broadcom BCM57810S chipset	
	Data Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Onboard Memory	256MB	
	Bus Type	PCI Express v2.0 (Gen 2) x8 (FlexibleLOM slot)	
	Form Factor	FlexibleLOM	
	IEEE Compliance	802.3, 802.1ab, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.1au, 802.3ap	
Power and Environmental Specifications	Operating	Temperature	32° to 131° F (0° to 55° C)
		Humidity	10% to 90% non-condensing
	Power	<12W	
	Emissions	USA: FCC Part 15 Class A; Canada: ICES--3, Issue 4; Japan: VCCI V3 (2010.04) Class A; International: EN55022:2006 + A1:2007 Class A; International: EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008; Taiwan: BSMI, CNS13438 (2006) Class A; Australia/New Zealand (AS/NZS): EN55022:2006+A12007 class A; Korea: KN22 Class A, KN24	
	Safety	6 of 6	
	Other	UL Mark (USA and Canada)	
		CE Mark EN 60590	
Operating System Support	Microsoft Windows Server 2008, Server 2008R2, and HPC Server 2008, 32 and 64-bit		
	Microsoft Windows Server Hyper-V		
	Red Hat Enterprise Linux 5.x and 6.0		
	SLES 10 and 11		
	VMware 4.0 and 4.1		
	Solaris 10		
	NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html		



Technical Specifications

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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